UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ARIZONA ECOLOGICAL SERVICES STATE OFFICE
3616 West Thomas Road, Suite 6
Phoenix, Arizona 85019

Telephone: (602) 379-4720 FAX: (602) 379-6629

May 3, 1994

In Reply Refer To:
AESO/ES
2-21-92-F-070

MEMORANDUM

TO: Gila Resource Manager, Safford District, Bureau of Land Management, Safford, Arizona

FROM: State Supervisor

SUBJECT: Biological opinion, Gila Box Riparian National Conservation Area Interdisciplinary Activity Plan, Graham County, Arizona

This responds to your request of January 7, 1994, for formal section 7 consultation with the Fish and Wildlife Service (Service) pursuant to the Endangered Species Act (Act) of 1973, as amended, on the preferred alternative contained in the subject draft plan. The listed species potentially affected by this action are the endangered bald eagle (Haliaeetus leucocephalus), peregrine falcon (Falco peregrinus anatum), razorback sucker (Xyrauchen texanus) and its designated critical habitat on the Gila River, and the threatened spikedace (Meda fulgida) and loach minnow (Tiaroga cobitis). Habitat for the proposed endangered southwestern willow flycatcher (Empidonax traillii extimus) likely exists within the project area.

The 90-day consultation period began on January 10, 1994, the date your request was received by the Arizona Ecological Service State Office. Notice of that receipt was sent to you in a memorandum dated January 13, 1994.

This biological opinion was prepared using information contained in the draft plan, other letters and documents exchanged between the Bureau of Land Management (Bureau) and the Service, data in our files or in the published or grey literature, and other sources of information.

BIOLOGICAL OPINION

It is the Service's biological opinion that the implementation of the preferred alternative for the Gila Box National Riparian Conservation Area is not likely to jeopardize the continued existence of the endangered bald eagle, peregrine falcon, or razorback sucker. Designated critical habitat for the razorback sucker in the Gila River is not likely to be destroyed or adversely modified. The threatened spikedace and loach minnow have been extirpated from the project area and will not be affected by the proposed action. Implementation of the preferred alternative is not likely to jeopardize the continued existence of the proposed endangered southwestern willow flycatcher.

BACKGROUND INFORMATION

Consultation History

The Service provided a species list to the Bureau for the Gila Box planning effort on April 29, 1992. The draft plan was made available for public review in October, 1993, and the Bureau requested formal section 7 consultation on all alternatives in the plan on November 30, 1993. The Service advised the Bureau in a memorandum dated December 16, 1993, that we were not able to evaluate all the alternatives as part of formal consultation. The Bureau requested formal consultation on the preferred alternative on January 7, 1994.

Description of the Action

The Arizona Desert Wilderness Act of 1990 (Public Law 101-628) designated the Gila Box Riparian National Conservation Area (Gila Box NRCA) to conserve, protect and enhance the riparian areas and associated resources and values. Included in the law was the requirement that the Bureau develop a management plan for the Gila Box NRCA. The draft Interdisciplinary Activity Plan (Gila Box Plan) and preferred alternative under consultation are intended to meet this requirement. Upon approval of the Gila Box Plan, it will replace the current management plan approved in 1985.

The Gila Box Plan is conceived as a comprehensive management strategy and as such, contains general project goals as well as specific projects. Some of the more general management strategies included in the preferred alternative may not require additional section 7 consultation. Most of the specific actions undertaken as part of this plan will likely require additional consultation of some sort to deal with residual adverse effects and incidental take. Any changes made to the preferred alternative as a result of public comment on the Gila Box Plan will require a review to determine if additional consultation would be needed.

The draft Gila Box Plan contains an array of issues and potential management for those issues. The Service will not attempt to include all of this material in this biological opinion and references the draft Gila Box Plan for this specific information. A brief summary of the preferred alternative is provided herein.

There are several management directions that are common to all alternatives. These deal with issues of land ownership, instream water rights, inventory of resources, fish and wildlife research and management with a special emphasis on native species, cultural resources, transportation, recreation, livestock management and mineral resources. All Bureau lands in the Gila Box NRCA were divided into one of three zones. Zone A consists of lands largely unmodified by human actions and structures and represents the natural environment. Zone B consists of lands which may have some contemporary human activities and structures but still retains the features of a natural environment. Zone C consists of lands with noticeable human activities and structures that still retains features of a natural environment. Management of Zone A would reflect a hands-off approach and be a comparison for evaluating progress made in the other two zones. Active management for endangered and threatened species is not allowed in Zone A. In Zone B, projects would be more localized than in Zone C where a more active approach to management would be used.

The preferred alternative is referred to in the draft Gila Box Plan as a balanced allocation of multiple uses. As such, it would allow for the continued use of the area by livestock operators and recreationists. In this alternative, there are 989 acres of Zone A, 12,222 acres of Zone B and 8,556 acres of Zone C lands. Each of the major management issues and the proposed actions are summarized in the following paragraphs.

Road access

The preferred alternative reduces the amount of road access to riparian areas through road closures and re-routing of existing segments. There would be 4.0 miles of riparian road closed to public access with 3.2 miles left open. Administrative access along closed roads would be allowed. Of the road open to public access, 3.0 miles is along Bonita Creek, the remaining 0.2 miles would be along the Gila River. Improvements to remaining roads would seek to reduce the effects of creek crossings and redesign of four miles of road to reduce adverse effects to the riparian areas. Upgrades to some roads are also planned and additional roads would be maintained. There would be two crossings and one access point on Bonita Creek and one crossing and five access points on the Gila River.

Water resources

Work on degraded portions of Bonita Creek is included in this alternative. Monitoring of water quality and correction of identified pollution sources is also planned.

Wildlife and Fisheries

Wildlife habitat improvement in Zone A (5.2 miles of Bonita Creek and 23 miles of the Gila River) would be left to natural rehabilitative processes. Riparian areas in Zones B and C would receive more active management. Baseline monitoring on wildlife populations would be accomplished. Three riparian exclosures on Bonita Creek and two on the Gila River would be placed to assess the progress of unexclosed areas under changes in livestock management.

Limited emphasis on fish is part of the preferred alternative. Macroinvertebrate sampling would be conducted, and five to ten off channel pools for native fish rearing would be constructed.

Recreation

New construction and upgrades to existing facilities is called for in the preferred alternative. New campgrounds and picnic areas, boat access points, trails and parking facilities would be located in both riparian and upland areas.

Livestock management

The goal for the preferred alternative is to reduce the amount and duration of livestock use in the riparian areas. There are ten allotments containing lands designated as the Gila Box NRCA. Seven of these have grazing systems in place, although one allotment has not implemented the system. The remaining three are grazed year round. Three of the ten allotments (Turtle Mountain, Zorilla and County Line) do not contain riparian areas. This formal consultation on the Gila Box Plan does not include consultation on the AMPs for these allotments. This consultation can only examine the general effects of the types of changes proposed for livestock management on the riparian and aquatic values of the Gila Box NRCA. Separate formal section 7 consultation is likely needed for all allotments containing riparian areas, both those with actions on the watershed that affect the aquatic and riparian areas and those that require facilities (such as roads) that have an effect on the riparian and aquatic system.

The draft Gila Box Plan provided some information on the current operations of the allotments for use in evaluations. Summaries of the changes to each allotment that would result from the implementation of the Gila Box Plan are given below.

1. Johnny Creek (4615): The 1,249 acres of this allotment in the Gila Box NRCA represent nine animal units (AUs) of the allotment total 185. The current one herd, three pasture deferred rotation grazing system would continue. From the present 6 month use period for the riparian area with a 40 percent utilization, livestock use of Bonita Creek would be limited to 20 percent utilization and season of use would continue to vary. New upland water sources, fences and other facilities would be needed for implementation.

2. Bonita Creek (4616): The 7,855 acres of this allotment in the Gila Box NRCA represent 78 AUs of the allotment total 365. The current one herd seven pasture grazing system would be altered to a nine pasture system. The same areas of Bonita Creek used by livestock under the current system would still be grazed, although for one of the two reaches the time grazed is reduced. Utilization would be 0 to 40 percent compared to the average of 40 percent currently present. New upland water sources, fences and other facilities would be needed for implementation.

3. Bull Gap (4617): The 3,122 acres of this allotment in the Gila Box NRCA represent 36 AUs of the allotment total 140. The existing livestock exclosure and deferred grazing agreement that are part of the existing AMP would be revised to allow no livestock use of the portions of Bonita Creek and the Gila River within the allotment. New upland waters would be constructed to provide water for livestock.

4. Turtle Mountain (4618): The 426 acres of this allotment in the Gila Box NRCA represent 8 AUs of the allotment total 380. This allotment has no riparian areas and the only modification proposed is the addition of a fence to prevent livestock drift into the Gila River.

5. Twin C (4621): The 2,368 acres of this allotment in the Gila Box NRCA represent 35 AUs of the allotment total 185. The two herd, two unit, six pasture would be revised to remove livestock from the Gila River pasture. New range improvements include upland waters, fences and other facilities.

6. County Line (4622): The 518 acres of this allotment in the Gila Box NRCA represent 8 AUs of the allotment total 148. This allotment has no riparian areas and no livestock access to Bonita Creek or the Gila River. It would not be affected by the preferred alternative.

7. Zorilla (4011): The 3,132 acres of this allotment in the Gila Box NRCA represent 42 AUs of the allotment total 239. This allotment has no riparian areas but there is some access to the Gila River. A fence would be placed to block this access.

8. Gila (4014): The 2,489 acres of this allotment in the Gila Box NRCA represent 14 AUs of the allotment total 30. The AMP for this allotment has not been implemented. In the short term, the one herd, three pasture rest-rotation system would be extended to a 24 month cycle with the Gila River pasture grazed each winter. Upland waters, roads, fencing and a water point would be required. Once the present allottee no longer wished to use the allotment, it would be retired.

9. Smuggler (4010): The 295 acres of this allotment in the Gila Box NRCA represent 2 AUs of the allotment total 130. The use of the Gila River riparian pasture in the winter with a 40 percent utilization on key species would continue. Additional maintenance work would be required to supply water to the Gila allotment as is now done for the County Line and Zorilla allotments.

10. Morenci (4003): The 2,037 acres of this allotment in the Gila Box NRCA represent 24 AUs of the allotment total 326. The current situation that allows livestock year round access to the Gila River would be modified to a riparian pasture with a 20 percent average utilization level and winter use only. Fencing, upland water development and water gaps would be part of the implementation.

Description of the Project Area

The Gila Box NRCA is located in Graham County, Arizona. Portions of the Gila River and three perennial tributary streams, Bonita Creek, Eagle Creek and the San Francisco River are included in the project area, although only the Gila River and Bonita Creek have significant reaches within the project area. The overall area is characterized by steep walled narrow canyons with riparian zones flanking the creeks and rivers. Terrestrial vegetation communities have characteristics of both the Sonoran desert to the west and the Chihuahuan desert to the east due to the project area location in the transition zones between these deserts.

Both the Gila and San Francisco rivers rise in western New Mexico and flow south and west to their confluence in the upper end of the Gila Box NRCA. Both Bonita and Eagle creeks flow south from their origins south of the Mogollon Rim. Considerable information on the physical, chemical and biological attributes of the general area of the Gila Box NRCA is available in the 1979 Resource Inventory for the Gila River Complex, Eastern Arizona (Minckley et al 1979). Information from this source is incorporated by reference.

While the isolated nature of the project area has protected it from some level of effect from human actions, water diversions upstream from and within the Gila Box NRCA, mining, livestock grazing and recreation have all played a part in developing the existing condition of the resources. The draft Gila Box plan did not contain specifics on the present condition of resources within the Gila Box NRCA.

Species Descriptions

Razorback sucker

The razorback sucker is an endemic fish species of the Colorado River Basin. Historically, large populations were found in the major tributaries of the Gila River subbasin (Bestgen 1990). In the Gila River, it was historically found at least as far upstream as Ft. Thomas. The razorback sucker was extirpated from the Gila River by the late 1970's. Reintroduction efforts in the Gila River since 1981 have not been successful in reestablishing a self-sustaining population. The razorback suckers in the Gila River were fully protected as endangered in the 1991 final rule that listed the species as endangered. Razorback suckers utilize both quiet backwater areas and river channel habitats. Spawning takes place over a variety of substrates, but shallow gravel and rocky areas are often used and the spawning

period usually lasts from January or February to April or May, depending upon water temperatures (reviewed by Minckley et al. 1991). Critical habitat for the razorback sucker includes the Gila River and its 100-year floodplain through the Gila Box NRCA. The inclusion of the floodplain does result in the inclusion of the mouths of all tributaries in the designation.

Bald eagle

The bald eagle was listed as an endangered species on March 11, 1967 (32 FR 4001). No critical habitat has been designated for this species. The bald eagle was once found throughout North America, nesting in trees or on cliffs near seacoasts, lakes and rivers. The primary food is fish, taken live or as carrion. Chemical contamination, chiefly by organochlorine pesticides, caused severe population declines and local extirpation throughout the species' range, through reproductive failure and direct toxicity.

Although not considered a separate subspecies, bald eagles in the southwestern United States are considered a distinct population for purposes of recovery efforts and section 7 consultation under the Act (Service 1982, Service 1986). Southwestern bald eagles constitute a distinct population, distinguishable by morphology, breeding chronology and geographic isolation. Southwestern bald eagles are also distinct behaviorally, frequently nesting on cliffs, a phenomenon rare or absent outside this geographic region. The southwestern bald eagle nests early, with eggs laid in January or February. This is believed to be a behavioral adaptation to avoid the extreme desert heat of midsummer. The young eagles remain in the vicinity of the nest until June (Hunt et al. 1992). This population also supplements its piscine diet with mammals, birds and reptiles, taken either live or as carrion (Hunt et al. 1992). Approximately thirty-four occupied bald eagle breeding areas (BAs), each supporting one nesting pair, have been identified in the southwestern population in recent years. The majority of the population inhabits Arizona, distributed along the Salt, Verde, Gila and Bill Williams Rivers, and several major tributaries. There are 32 nest sites known in Arizona (Hunt et al. 1992).

Peregrine falcon

The peregrine falcon was listed as an endangered species in 1970. No critical habitat has been designated. Human disturbances and effects of egg shell thinning due to pesticides in the prey base were largely responsible for the decline of this species. Inhabiting areas of cliffs and steep terrain, peregrine falcons may be found in many areas of Arizona and populations have recovered somewhat due to restrictions on pesticide uses. Peregrine falcons are aerial predators, taking small to medium sized birds on the wing. Primary hunting areas are characterized by high concentrations of suitable bird species and include riparian and woodland areas.

Environmental Baseline

The environmental baseline serves to define the current status of the listed species and its habitat to provide a platform to assess the effects of the action now under consultation. While it is clearly focused on conditions in the action area, it is important to include in the environmental baseline the status of the listed species throughout its range as well as in the action area. Any evaluation of the effects of the action must be made in the context of the overall status of each affected species.

The environmental baseline is developed using past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process. A summary of status information for the species from outside the action area also forms a part of the environmental baseline.

Past Actions

The Gila River is subject to the effects of Federal, State and private actions. There are both new and long-term ongoing actions in the action area. Impacts of these human activities on the Gila River watersheds have had profound effects on the river and associated riparian areas. Water diversions and return flows, flood control projects, livestock grazing, timber harvest, recreational activities, and changes in annual flows due to off-stream uses of water have impaired the ability of the aquatic habitats to support native fish. For the most part, the effects of most Federal activities on fish habitat did not undergo section 7 consultation due to the lack of listed species in the area until 1991, but the probable effects of these types of activities on habitat for razorback sucker have been documented in other areas. One recent Federal action, the reconstruction of the City of Safford's water supply system, has been the subject of section 7 consultation. Significant effects to the riparian and aquatic habitats along Bonita Creek resulted from this action. Development and implementation of a restoration plan was required in the biological opinion.

The loss of riparian vegetation from these activities has affected the habitat of the bald eagle and peregrine falcon. The health of both the aquatic and riparian habitats is important to the maintenance of a prey base for these birds. Changes in water flows in the river that result from human activities on the watershed that adversely effect the aquatic system may also have profound effects on the stability and regenerative ability of the riparian vegetation.

Development in the bottomlands or floodplains also eliminates portions of the natural riparian areas. Changes to the watershed that affect how runoff is delivered to the river have effects to patterns of erosion and aggradation of sediments and influence how the river will move across its floodplain. Erosion that forms tall, steep banks may prevent the flooding of adjacent floodplains and cause changes to the height of the water table. This

has adverse effects to fish species such as the razorback sucker which are known to use these flooded bottomlands. Riparian vegetation may be lost if the water table moves below the level their roots can reach.

Razorback sucker

The reintroduced razorback sucker populations in the Gila, Salt and Verde Rivers are small and not self-sustaining. The natural populations along the lower Colorado River are larger, but recruitment is not adequate to support these populations, now dominated by old adult fish. In the upper Colorado River basin, only small populations survive and recruitment is also very limited. Non-native fish have a tremendous influence on razorback sucker survival and recruitment, and habitat conditions that favor the non-native fish restrict the potential for recovery actions. The razorback sucker was listed as endangered in 1991 after 10 years of reintroduction efforts in Arizona failed to reestablish self-sustaining populations and the overall status of the species was declining as old adults died and were not replaced. Restoration of the razorback sucker to its former range will require that both physical and biological habitat degradation be controlled.

Bald eagle

The southwestern bald eagle population is exposed to increasing hazards from a regionally increasing human population. These include extensive loss and modification of riparian breeding and foraging habitat through clearing, changes in groundwater levels and the natural hydrograph, and changes in water quality. Hazards also include increasing human disturbance from urban, rural and recreational encroachment into breeding habitat. The bald eagle population in the Southwest was probably never very large due to limited habitat, and in pre-industrial times likely fluctuated in size in response to weather conditions (e.g. cyclic droughts and wet periods). Following the banning of domestic use of the pesticide DDT in 1972, the Arizona bald eagle population has probably recovered despite increasing pressures of a regionally increasing human population and associated industrialization. Migratory bald eagles that are found throughout the state are faced with much the same pressures, although over a shorter time. Provision for adequate winter habitats is important for the health of both resident and wintering bald eagles.

Peregrine falcon

The improvement in peregrine falcon populations in the western United States and the successful reintroduction of this species to the eastern United States has resulted in efforts to downlist the species to threatened. In some areas, the effects of pesticide use on reproductives success remain significant, but in other areas, especially where the peregrine falcon population is resident year round, the problem has dramatically reduced. Peregrine falcons in Arizona are still at risk from human disturbance and the effects of human activities on the prey base. Disturbances at eyrie sites may cause abandonment of a nest,

and theft of chicks does continue. Degraded habitats for a suitable prey base may still be a limiting factor in the expansion of existing populations.

EFFECTS OF THE ACTION

Direct and Indirect Effects

Razorback sucker

Implementation of the preferred alternative in the draft Gila Box Plan will have a variety of direct and indirect effects to the razorback sucker and its critical habitat. The federal lands in the Gila Box NRCA have been managed under a series of management plans for many years. Thus, the issues included in the draft Gila Box Plan are not new starts, but are the continuation of existing uses with some changes or adjustments to management. Past uses of the Gila Box NRCA have had an effect on the resources of the area and by maintaining those uses, there is a continuation of these effects. The management actions proposed are intended to reduce the adverse effects to the environment of these allowed activities. Effects cannot be eliminated without eliminating the uses.

The condition of upland vegetation communities has an effect on the quality of aquatic habitat. Watersheds in less than satisfactory condition have different patterns for runoff and sediment transport than those in good condition. Information in the draft Gila Box Plan states that watersheds in the Gila Box NRCA are generally in good to excellent condition. Although there will be a decrease in road miles, roads will continue to be maintained in the upland areas. Livestock use of these areas will continue under current allotment plans until those plans are revised. Recreation use is likely to increase with new facilities included in the Gila Box Plan. The role of natural fire in the maintenance of vegetation communities will increase, with the potential for short term changes in watershed condition after a fire. These changes to management in the uplands are not likely to significantly alter the present condition. There may be a longer term reduction in sediment inflows to aquatic habitats due to better road design and maintenance and the potential for short term increases after fires. Effects of livestock grazing on the watersheds that influence aquatic habitats will continue at current levels. These types of effects include increased nutrient loading and the construction and maintenance of facilities needed to support the grazing operations.

The riparian vegetation community is much more closely linked to the aquatic system. Areas of riparian vegetation have been lost to provide road corridors and recreation sites, and regeneration of stands has been affected by livestock grazing in these areas. Where these types of disturbances have occurred, there is a higher risk of erosion and reduction in water quality. These effects may have an influence on conditions both upstream and downstream of the affected area. There would be a reduction in the number of roads and road crossings that affect the riparian and aquatic system, and improvements to the

remaining roads are intended to further reduce the residual effects. Continuing to allow livestock grazing in the riparian areas maintains a level of adverse effect due to vegetation removal, bank damage and effects to water quality. The extent of the management change proposed may not result in an overall decrease in these effects from the current level even with the removal of 9 miles of river from livestock use. Maintenance of recreational facilities in the riparian areas precludes recovery of these areas, thus continuing adverse effects. Recreationists also directly use the aquatic habitats and may disturb fish and fish habitats in the process. Management actions proposed may reduce some effects, but the reductions are not likely to be large.

Any improvement to watersheds, riparian and aquatic habitats likely improves the habitat conditions for the razorback sucker. Other aquatic species could also be benefited. If the species so benefited are not native, this could increase adverse effects from non-native fish species on native species such as the razorback sucker. Development of isolated habitats and other management strategies to enhance the razorback sucker population in the Gila Box NRCA support the recovery of this endangered species.

Critical habitat for the razorback sucker is located along the Gila River and its 100-year floodplain in the Gila Box NRCA. Improvements to watershed and riparian conditions may contribute to enhancing the constituent elements. Continuation of uses such as livestock grazing and riparian and aquatic based recreation retains some adverse effects to the constituent elements. The limitations placed on Zone A lands may preclude some projects to enhance critical habitat or provide for species management.

Bald eagle

The only record of bald eagles from the project area is of wintering individuals and no known nest sites are nearby. Bald eagles that winter in Arizona appear to be widely distributed, and may relocate periodically in response to availability of food and roost sites. These wintering eagles range widely and have lower energetic needs than breeding eagles (since they are not rearing young). Any improvement to riparian areas either in terms of the production of additional roost trees or in terms of improved foraging opportunities due to increased aquatic resources would be of benefit to wintering bald eagles that use the project area. An increase in recreation use may decrease these benefits, if the increased recreational use occurred when the bald eagles were present and in portions of the project area preferred by the species.

Peregrine falcon

There are no nesting pairs located in the project area, however it is likely that the Bonita Creek/Gila River area is used as a foraging area by birds nesting out of the Gila Box NRCA due to the concentration of bird species present. Activities that enhance these prey populations could provide a benefit to the species. Improvements to the riparian areas could have this effect, if the activities implemented under the Gila Box Plan do show

positive effects on the riparian values. The ability of the peregrine to use the project area for foraging is also somewhat dependent upon the degree of human use of the area, but the actual limitations are unclear.

Interrelated and Interdependent Effects

Exploration of these types of effects is best accomplished during consultation on specific projects to be implemented under the final Gila Box Plan.

Effects to Survival and Recovery

Razorback sucker

Clearly, it is the intent of the preferred alternative in the draft Gila Box Plan to continue to improve conditions of all habitats in the Gila Box NRCA while allowing most past uses of the area to continue. However, the preferred alternative is not the most protective alternative, and thus has less potential to contribute to the survival and recovery of the razorback sucker. Restrictions on active management in Zone A may preclude efforts to conserve the razorback sucker. Given the status of the species throughout its range, there is a clear need for all agencies to fulfill their section 7(a)(1) responsibilities to provide for the conservation of this species.

Bald eagle and **peregrine falcon**

Improvements to foraging and wintering areas for these species contributes to their conservation.

Cumulative Effects

Cumulative effects are those effects of future State or private activities that have no Federal connection, that are reasonably certain to occur within the action area of the Federal action subject to consultation.

It is anticipated that the ongoing private actions described in the environmental baseline will continue in the action area. Reconstruction of the City of Safford's water facility in Bonita Creek is not a cumulative effect since it was paid for by Federal funding. Future maintenance of the system is a cumulative effect and will continue to require road access and projects in the riparian areas as well as the depletion. It is unclear at this point if additional depletions are possible.

INCIDENTAL TAKE

Section 9 of the Act, as amended, prohibits the taking (harass, harm, pursue, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species without a special exemption. The concept of harm includes habitat modification and degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding or sheltering. Case law has affirmed that taking does harm to listed threatened species when there is definable injury or death to individuals. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of the agency action, is not considered taking within the bounds of the Act, provided such taking is in compliance with the incidental take statement provided in the biological opinion.

Past management actions in the Gila River basin have contributed to the extirpation of the razorback sucker from most of its historic range. Improvements to management practices in the Gila Box NRCA have already resulted in improved riparian and aquatic habitats. The preferred alternative intends to continue that trend but does allow for some level of habitat degradation to continue as a result of human use of the area. This level represents take of habitat that may adversely affect breeding, feeding and sheltering of a listed species. The actual level of such take is not specifically definable from the information in the biological evaluation, thus no specific level is set in this statement. The level of incidental take can be determined for specific projects undertaken as part of the final Gila Box Plan and will be developed during those consultations.

Reasonable and Prudent Measures

Without a specific level of incidental take documented in this biological opinion, the development of reasonable and prudent measures to reduce that take becomes difficult. However, it is possible to include in this biological opinion some measures to reduce the time period the present level of take would continue while specific projects are being developed and implemented. The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental take resulting from this Federal action:

1. Measures to minimize the time between approval of the final Gila Box Plan and the implementation of actions under that plan that have effects to the riparian and aquatic habitats should be developed.

2. Measures to evaluate the lost opportunities from management restrictions on Zone A should be developed.

Terms and Conditions

To be exempt from the prohibitions of section 9 of the Act, the Bureau must ensure the applicant's and their own compliance with the following terms and conditions which implement the reasonable and prudent measures described above.

1. To implement reasonable and prudent measure 1, the following terms and conditions will be implemented:

   a. Projects implemented under the final Gila Box Plan will be reviewed and prioritized on the basis of the potential benefits to riparian and aquatic habitats.

   b. Recognizing that funding may be limited or otherwise constrained, the Bureau will attempt to fund high priority projects as soon as possible.

   c. If implementation of over one half of the riparian based projects under the final Gila Box Plan is delayed for over five years, the Bureau will contact the Service for additional discussions of ways to implement the actions to protect listed species and their habitats and achieve compliance with section 7 requirements for ongoing actions.

2. To implement reasonable and prudent measures, the following terms and conditions will be implemented:

   a. Management restrictions on Zone A will be reviewed to determine if an exception should be made for projects involved with the recovery of endangered or threatened species.

Reporting Requirements

The Bureau will coordinate informally with the Service during the implementation of actions under the final Gila Box Plan.

CONSERVATION RECOMMENDATIONS

Sections 2(c) and 7(a)(1) of the Act direct Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the

proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for the species.

The Service recommends the following actions:

1. The preferred alternative be modified to completely eliminate livestock grazing from the riparian areas along the Gila River and Bonita Creek. Based on the information in the biological evaluation, this would increase the rate of improvements in these habitats.

2. The validity evaluation of the Dorothy B mining operation be completed as soon as possible and if appropriate, the area be withdrawn from mining.

PROPOSED SPECIES

The southwestern willow flycatcher was proposed for listing as endangered with critical habitat on July 23, 1993 (58 FR 39495). Historically, it is likely that this species was found in the project area, although there are no recent sightings. Suitable habitat still exists. Implementation of the preferred alternative would improve the riparian habitats needed by this species, while also retaining some adverse effects. Consultations for specific actions under this plan should include an analysis of effects for this species.

CONCLUSION

This concludes formal section 7 consultation on the preferred alternative in the draft Gila Box Plan as described in your January 7, 1994, request. As required by CFR 402.16, reinitiation of formal consultation is required if: 1) the amount or extent of incidental take is exceeded, 2) new information reveals effects of the agency action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion, 3) the agency action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this opinion, or 4) a new species is listed or critical habitat designated that may be affected by the agency action.

We remind the Bureau that additional consultation or conference may be required for the implementation of specific projects under this action. In addition, if there are significant changes as a result of the public comment period, additional consultation may be required before final approval of the alternative.

In future communications on this project, please refer to consultation number 2-21-92-F-070. If we may be of assistance, please contact Lesley Fitzpatrick or Tom Gatz.

for Sam F. Spiller

cc: Chief, Fish and Wildlife Service, Arlington, VA (DES)
Regional Director, Fish and Wildlife Service, Albuquerque, NM (AES)
Director, Arizona Game and Fish Department, Phoenix, AZ

LITERATURE CITED

Bestgen, K.R. 1990. Status review of the razorback sucker, Xyrauchen texanus. Larval Fish Laboratory Report #44. Colorado State University, Ft. Collins.

Hunt, W.G., D.E. Driscoll, E.W. Bianchi, and R.E. Jackson. 1992. Ecology of bald eagles in Arizona. Part A: Population overview. Report to U.S. Bureau of Reclamation, Contract 6-CS-30-04470. BioSystems Analysis, Inc., Santa Cruz, California.

Minckley, W.L., M.R. Sommerfeld, and others. 1979. Resource inventory of the Gila River complex, eastern Arizona. Report to Safford District, Bureau of Land Management contract number YA-512-CT6-216. Arizona State University, Tempe.

Minckley, W.L., P.C. Marsh, J.E. Brooks, J.E. Johnson, and B.L. Jensen. 1991. Management toward recovery of the razorback sucker (Xyrauchen texanus). Pages 303-357 in W.L. Minckley and J.E. Deacon, editors. Battle Against Extinction. University of Arizona Press, Tucson.

U.S. Fish and Wildlife Service. 1982. Bald eagle recovery plan (Southwestern population). U.S. Fish and Wildlife Service, Albuquerque, New Mexico. 65 pp.

U.S. Fish and Wildlife Service. 1986. Memorandum, from Service Director to Regional Directors, re: Jeopardy standard under the Endangered Species Act. U.S. Fish and Wildlife Service, Washington, D.C. March 6, 1986.